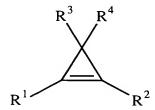
We claim:

1. A method of inhibiting an ethylene response in a plant, comprising contacting the plant with an effective ethylene response-inhibiting amount of a compound of the formula:



wherein:

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a) from 1 to 4 of R¹, R², R³, and R⁴ are each independently selected from the group consisting of: monohalomethyl, dihalomethyl, trihalomethyl, monohaloethyl, dihaloethyl, monohalopropyl, monohaloisopropyl, 1-hydroxymethyl, 1-hydroxyethyl, 2-hydroxyethyl, 1-hydroxypropyl, 2-hydroxypropyl, 3-hydroxypropyl, 1-hydroxy-1-methylethyl, 2-hydroxy-1-methylethyl, 1-amino-2-hydroxyethyl, 1-halo-2hydroxyethyl, 2-amino-1-hydroxyethyl, 2-halo-1-hydroxyethyl, 1,2-di-hydroxyethyl, 1-methoxymethyl, 1-ethoxymethyl, 1-methoxyethyl, 2-methoxyethyl, 1-aminomethyl, 1-aminoethyl, 2-aminoethyl, 1-amino-propyl, 2-aminopropyl, 3-aminopropyl, 1-amino-1-methylethyl, 2-amino-1-methylethyl, 1,2-diaminoethyl, 1-methylaminomethyl, 1-ethyl-aminomethyl, 1-methylaminoethyl, 2-methylaminoethyl, dimethylaminomethyl, -CH=NOH, -CMe=NOH, -CH₂CH=NOH, -CH=NOMe, -NHNH₂ -NMeNH₂ -NHNHMe, -NEtNH₂ -NHNHEt, -NHNMe₂ -NMeNHMe, -CH₂NHNH₂ -CH₂CH₂NHNH₂. -CH₂NMeNH₂ -CH₂NHNHMe, -CONH₂ -CH₂CONH₂ -NHCOR, -NHCOMe, -NMeCOH, -CONHMe, -CO₂Me, OCO₂R, -OCOH, -OCOMe, 1-cyanomethyl, 1-cyanoethyl. 2-cyanoethyl, -CH₂CO₂H; unsubstituted or substituted $\operatorname{nitro}(C_1-C_{12})$ -alkyl , unsubstituted or substituted nitro(C₁-C₁₂)alkenyl, unsubstituted or substituted nitro(C₁-C₁₂)alkynyl, unsubstituted or substituted azido(C₁-C₁₂)alkyl, unsubstituted or substituted azido(C₁-C₁₂)-alkenyl, and unsubstituted or substituted

- azido(C₁-C₁₂)alkynyl wherein the substituents are from 1 to 5 and selected from halo, cyano, nitroso, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio; and
- b) from 0 to 3 of R¹, R², R³, and R⁴ are each independently selected from the group consisting of hydrogen; (C₁-C₄)alkyl, (C₁-C₄)alkenyl, (C₁-C₄)alkynyl, halo, (C₁-C₃)alkoxy, -OCH2CH=CH2, -OCH2C≡CH, -NH₂, -NHMe, -NHEt, -NH(n-Pr), -NH(i-Pr), -NMe₂, -NMeEt, -CO₂H, or -NO₂; and

its enantiomers, stereoisomers, salts, and mixtures thereof; or a composition thereof.

- 2. The method of claim 1, wherein 2 of R¹, R², R³, and R⁴ are hydrogen.
- 3. The method of claim 1, wherein R^1 and R^2 are hydrogen or R^3 and R^4 are hydrogen.
- 4. The method of claim 1, wherein R², R³, and R⁴ are hydrogen.
- 15 5. The method of claim 1, wherein R¹, R², and R⁴ are hydrogen.

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- 6. The method of claim 1, wherein the ethylene response is one or more of ripening or senescence of flowers, fruits, and vegetables; abscission of foliage, flowers, and fruit; the shortening of life of ornamental plants, cut flowers, shrubbery, seeds, or dormant seedlings; inhibition of growth; stimulation of growth; auxin activity; inhibition of terminal growth; control of apical dominance; increase in branching; increase in tillering; changing the morphology of plants, modifying the susceptibility to plant pathogens such as fungi, changing bio-chemical compositions; abortion or inhibition of flowering or seed development; lodging effects; stimulation of seed germination;
 breaking of dormancy; hormone effects; and epinasty effects.
 - 7. The method of claim 1, wherein R¹ is monohalomethyl, dihalomethyl, trihalomethyl, monohaloethyl, dihaloethyl, monohalopropyl, monohaloisopropyl, 1-hydroxymethyl, 1-hydroxyethyl, 2-hydroxyethyl, 1-hydroxypropyl, 2-hydroxypropyl, 3-hydroxypropyl, 1-hydroxy-1-methylethyl, 1-amino-2-hydroxyethyl, 1-halo-2-

hydroxyethyl, 2-amino-1-hydroxyethyl, 2-halo-1-hydroxyethyl, 1,2-di-hydroxyethyl, 1-methoxymethyl, 1-ethoxymethyl, 1-methoxyethyl, 2-methoxyethyl, 1-aminomethyl, 1-aminoethyl, 2-aminoethyl, 1-amino-propyl, 2-aminopropyl, 3-aminopropyl, 1-amino-1-methylethyl, 2-amino-1-methylethyl, 1,2-di-aminoethyl, 1-methylaminomethyl, 1-ethyl-aminomethyl, 1-methylaminoethyl, 2-methylaminoethyl, or dimethylaminomethyl; and R^2 , R^3 , and R^4 are hydrogen.

8. The method of claim 1, wherein R¹ is hydroxymethyl or 2-hydroxyethyl.

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